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EXAMINER	
CHEON, PETER	

ART UNIT	PAPER NUMBER
2622	

NOTIFICATION DATE	DELIVERY MODE
12/17/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary	Application No.	Applicant(s)	
	10/532,051	HAGINO, YOSHIO	
	Examiner	Art Unit	
	PETER CHON	2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 September 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8 and 11-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *1,3-8,11,13,15,17,19-22 and 24* is/are allowed.

6)☒ Claim(s) *2-7,12,14,16,18 and 20-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _____ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 9/18/09 have been fully considered but they are not persuasive.

As to independent claims 2, 12 and 18, the Applicant argues that Murakami fails to disclose that the focus state storage means stores the focus states in sequential time order (as disclosed within page 12, lines 20-24 of the specification) thereby readily obtaining 1. focus state and 2. a time circumstance of the focus state in relation to other stored focus states. Furthermore, the Applicant argues that Murakami does not disclose that a series of focus evaluation values (or "temporal progression") is stored or used, much less that focus states are stored as a "temporal progress" (i.e. in time sequence). Instead, the Applicant contends that Murakami discloses the storage of only a single peak focus evaluation value and corresponding focus lens position, which, the applicant contends is not temporal progression of focus values.

In response, the Examiner contends that the claim language in no way requires that temporal progress be interpreted as "a series" of focus evaluation values stored, nor does it require an interpretation of "in time sequence". Furthermore, the Examiner contends that nowhere in the specification is this explicitly taught to be the definition of temporal progress. While the Applicant contends that based on the stored temporal

progress, a time circumstance of the focus state in relation to other stored focus states are readily obtainable, the Examiner, again, contends that this is not supported in the claim language, nor is it supported within the specification. Furthermore, the Examiner contends that the cited portions of the specification, namely page 12, lines 20-24 do not suggest these features. Instead, the cited portion of the specification merely discloses the moving of the focusing lens while obtaining focusing states, which appears to be a method similar to that of Murakami (i.e. the Hill Climbing Method).

In light of this, the Examiner contends that the previous interpretation of temporal progress (i.e. the temporal progress is the focusing position of the current image scene) is an interpretation of "temporal progress" that is acceptable in light of the current claim language. However, even if the claim language were to suggest that temporal progress required that a series of focus evaluation values were stored in time sequence, the Examiner contends that this is explicitly taught by Murakami. More specifically, Murakami discloses that the peak focus evaluation value stored in the memory is found as a result of a series of focus evaluation value measurements obtained in time sequence. This can be seen in col. 7, lines 35-45. Here, Murakami discloses that as the focal point of the lens is adjusted along the focusing range, the peak value of each measurement area, A1-A4, are measured and stored along with the peak position. Thus, it can be seen that the final peak value stored is a result of progressively moving along the focusing range and finding the peak values for each portion A1-A4.

In other words, the stored peak is a result of a series or time sequence of focus evaluation measurements.

Lastly, the Applicant contends that because no specific arguments are presented for the rejection of claims 14 and 16 under U.S.C. 102, it is assumed that the claims are rejected only for their dependence upon claim 2.

In response, the Examiner contends that a rejection was presented in the previous office action and the current office action for claim 14 and 16 under U.S.C. 103 and thus, specific arguments have been presented. If claims 14 and 16 were rejected solely on their dependence to claim 2, then claims 14 and 16 would have been objected to. However, this is not the case and as rejections for these claims is present.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 23 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one

skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

As to claim 23, the claim is rejected as presenting new matter. More specifically, claim 23 suggests that the third and fourth audio frequencies are respectively higher and lower than the first frequency dependent upon whether the in-focus state is judged to be in a direction in which imaging means moves respectively closer or away from the object of focus. However, the Examiner contends that the specification, as seen in PGPUB 2006/0044452 only discloses that both the third and fourth frequencies are less than the first frequency *(see paragraph 0073)*.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 2-4, 12, 14-16, and 18 are rejected under 35 U.S.C. 102(e) as being anticipated by **Murakami, USPAT 6359650.**

As to claim 2, Murakami discloses A focus state display, comprising:

focus state judging means for judging a focus state of an image captured from imaging means *(A microprocessor (fig. 2A, 13) determines whether all of the distance measurement areas (A1-A4) are in a in-focus state (col. 7, lines 47-51). The determination is executed by comparing the current lens position to a position in which the maximum evaluation values were captured. Or, in other words, the current lens position evaluation values are compared to the maximum evaluation values (col. 7, lines 66).*);

focus state storage means for storing temporal progress of the focus states of images obtained by the focus state judging means with temporal progress of the captured images *(The microprocessor (focus state judging means), which controls a focus detection circuit, 11, of fig. 2A (col. 4, lines 40-42), determines and stores the temporal progress of the captured images by controlling the focus detection circuit, 11, to find and store the in-focus evaluation values of the current (temporal) image within each distance measurement areas (col. 7, lines 35-44). Thus, the focus state judging means (microprocessor) determines and stores the temporal progress (or in other words temporal focus position) in a temporal image (current image to be captured).).);*

focus direction judging means for judging a focus direction from the temporal progress of the focus states obtained by the focus state storage means *(The focus evaluation values are compared to the temporal progress, stored in the focus state storage means (col. 7, lines 58-66). Subsequently, the microprocessor, 13, determines the display contents (col.*

8, lines 1-3), and displays the out-of-focus amount and focusing direction (col. 8, lines 11-12)); and

focus state display means that, according to the focus direction obtained by the focus direction judging means, displays information that indicates its focus state and focus direction on display means *(The microprocessor, 13, determines the display contents (col. 8, lines 1-3), and displays the out-of-focus amount and focusing direction (col. 8, lines 11-12).).*

As to claim 3, Murakami discloses the focus state display according to claim 2, wherein

the focus state display means indicates the focus state obtained by the focus state judging means with a plurality of graphic forms as many as a number according to its focused state *(fig. 4B; The focus is displayed by displaying an arrow consisting of three bars, which indicates the degree of movement required for proper focus. In addition, the focus display comprises a circle, which is filled in when in focus (col. 6, lines 58-65).).*

As to claim 4, Murakami discloses the focus state display according to claim 2, wherein

the focus state display means indicates the focus direction obtained by the focus direction judging means with symbols *(fig. 4B; The focus is displayed by displaying an arrow consisting of three bars, which indicates the degree of movement required for proper focus and the movement direction. In addition, the focus display comprises a circle, which is filled in when in focus (col. 6, lines 58-65).).*

As to claim 12, refer to the above claim 2.

As to claim 18, see the above claim 2

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Murakami, USPAT 6359650** in view of **Singh et al, USPAT 6937284.**

As to claim 5, Murakami discloses the focus state display according to claim 2, **but fails to disclose** the focus state display to comprise a light emitting means, wherein the focus state display means indicates the focus state obtained by the focus state judging means by making the light emitting means blink or turn on *(The in-focus state is displayed by filling in the circle (fig. 4B). There is no disclosed emitting light.).*

Singh, however, discloses a focus state display means which indicates the current focus state of an image by emitting light through a plurality of LED's, which signifies the level of focus *(fig. 5, 100; col. 10, lines 7-8).*

Therefore, it would have been obvious to one of ordinary skill in the art, to incorporate the plurality of LED's, signifying the current focus state, as disclosed within the focus state display of Singh, within the focus state display of Murakami, in order to provide an alternative, and more eye catching method of indicating the focus state of the image.

As to claim 6, Murakami in view of Singh discloses the focus state display according to claim 2, **further comprising sounding means**, wherein the focus state display means informs the user of the focus state obtained by the focus state judging means by making the sounding means emit sound *(Singh; col. 10, lines 27-42; A sonic transducer, 92, emits an audible sound which indicates the focus level.).*

Claims 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Murakami, USPAT 6359650,** in view of **Na, 6545715.**

As to claim 7, Murakami discloses the focus state display according to claim 2, **but fails to disclose** the focus state display to further comprise filtering means for eliminating high spatial frequency components of image data, wherein

the focus state display displays the image data by removing a wider range of high spatial frequency components with a filtering means as the focus state becomes worse based on the focus state obtained by the focus state judging means.

Na, however, discloses a focus control apparatus and method comprising an adaptive filter, reducing errors due to noise by removing high-frequency noise in a low-frequency area of the image, resulting in a more precise focus value *(col. 8, lines 36-43).*

Therefore, it would have been obvious to one of ordinary skill in the art, to incorporate the step of removing high-frequency noise from the image signal, as disclosed by Na, within the focus detecting/displaying apparatus, as disclosed by Murakami, in order to obtain a more precise focusing *(Murakami discloses a focus detection circuit which detects a focus position for each distance measurement area (col. 7, lines 39-44). The focus position is then compared to a current position of the camera, to determine if the camera is in focus (col. 7, lines 47-57). The removal of high-frequency noise, as disclosed by Na, in finding the focus points, as disclose by Murakami, results in a superior focus measurement, which will be compared to the current camera position (as disclosed by Murakami), resulting in the focus state/movement direction being displayed.).*

Claims 14 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Murakami, USPAT 6359650** in view of **Singh et al, USPAT 6937284,** further in view of **Ohsawa et al, USPAT 5499074.**

As to claim 14, Murakami in view of Singh, as combined in claim 5 discloses the focus state display according to claim 2, but fails that if the focus state cannot be measured, the focus state cannot be calculated due to any of brightness, shape and patterns of the image *(Murakami relies on the Hill-Climbing method to determine the focus state. More specifically, using the Hill-Climbing method, Murakami finds the location of the*

highest contrast peak. However, Murakami fails to account for the situation where there isn't enough contrast within the image to detect the focusing state. In other words, the method of Murakami assumes that a sufficient peak can be detected and never accounts for the situation where a focus state cannot be measured.).

Ohsawa, however, discloses an auto focus camera wherein the camera determines, in the auto focus process, whether or not focusing is obtainable. More specifically, Ohsawa discloses that when measuring for contrast (in determining focus position), the focus state is undetectable when there is a lack of contrast within the image *(col.4, lines 13-23)*. Ohsawa further discloses that the user is warned of the fact that that focusing is unobtainable when a lack of contrast exists within an image scene *(col. 3, lines 51-55).*

Therefore, it would have been obvious to one of ordinary skill in the art to incorporate the step of determining that a lack of contrast exists within an imaging scene and warning the user of such a situation, as disclosed by Ohsawa, within the focus detecting apparatus of Murakami, in order to prevent the user from picking up an image based on the peak from an imaging scene with insufficient contrast *(Murakami discloses that focus is detected from detecting the highest contrast within the contrast curve for each focus area (col. 5, lines 25-42 and col. 7, lines 35-66 and fig. 9). Murakami assumes that a sufficient peak of the contrast curve is able to be measured (during for example, fig. 9, steps S2-S4). However, taking into account that there are situations where a sufficient contrast cannot be obtained, as obtained by Oshawa, the display of Murakami discloses that the focusing position*

cannot be obtained. Furthermore, the lack of contrast is inherently a result from brightness conditions within the imaging scene.).

As to claim 16, Murakami in view Singh further in view of Oshawa discloses the focus state display according to claim 2, wherein the focus state display means indicates the focus state cannot be measured when the focus state judging means judges that the focus state is not capable of being measured *(Ohsawa; col. 3, lines 51-54)*

Claim 20 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Murakami, USPAT 6359650** in view of **Singh et al, USPAT 6937284,** in view of **Ohsawa et al, USPAT 5499074,** further in view of **Bigler et al, USPAT 6570621.**

As to claim 20, Murakami in view of Singh in view of Ohsawa discloses the focus state display according to claim 2 but fails to further include a sounding means wherein the focus state display emits, via the sounding means, a voice that instructs the user of a direction to move the camera if the judged focus state is in focus or impossible to measure, and informs the user of the focus state when the judged focus state is in focus and when the focus state is impossible to measure *(As disclosed in the above claims 2 and 5, Murakami displays the focus state (i.e. focused vs unfocused) as well as moving instructions when the camera is out of focus (figs. 4A and 4B). In addition, Singh audibly announces to the user the current focus state and focusing direction required for sharper focusing by emitting an audible tone. Lastly, Ohsawa discloses that it is displayed to the user when focusing cannot be achieved (using any of the methods presented by Murakami and Singh). However, Singh never discloses that the user is instructed by using voice commands.).*

Bigler, however, discloses a communication method between a camera and a user, wherein the camera messages and instructs the user to perform an operation with the use of voice *(col. 3, lines 35-40)*.

Therefore, it would have been obvious to communicate with/instruct the user of the focus state, instructions towards sharper focusing and whether or not focusing can be achieved, as disclosed by Murakami in view of Singh in view of Ohsawa, by the use of voice, as disclosed by Bigler, in order to communicate with the user using a clear, intuitive and easily understandable communication medium *(In other words, the notifications and commands of Murakami in view of Singh in view of Ohsawa are all communicated using an audible voice.)*.

As to claim 24, see the above claim 20.

Claims 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Murakami, USPAT 6359650** in view of **Singh et al, USPAT 6937284** further in view of **Ogasawara et al, USPAT 4319238.**

As to claim 21, Murakami in view of Singh discloses the focus state display according to claim 5, but fails to disclose that the light emitting means is turned steadily on when the focus state is judged to be in focus and blinks when the focus state is judged to require adjustment.

Ogasawara, however, discloses a camera display device for displaying a focus state to a user, wherein LED's are turned on when in a focused state and blinks when requiring focusing adjustment *(col. 2, lines 46-54; col. 3, lines 33-63)*.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the step of steadily turning on the LED's when in focus, and blinking the LED's when a focus adjustment is required, as disclosed by Ogasawara, within the device of Murakami in view of Singh (i.e. the LED's of Murakami in view of Singh which displays the current focus state to the user), thereby allowing the user to have an even greater idea of the current focusing status of the camera.

As to claim 22, Murakami in view of Singh, further in view of Ogasawara discloses the focus state display according to claim 21, wherein the light emitting blinks at a rate commensurate with the determined focus state value *(Ogasawara discloses that the duty cycle of blinking of the LED's is commensurate with the focus level (col. 3, lines 48-63).).*

Allowable Subject Matter

Claims 1, 3-8, 11, 13, 15, 17, 19-22, and 24 are allowed.

As to claim 1, the independent claim pertains to a focus state display comprising **a focus state judging means** for judging a focus state of an image captured from imaging means, **a focus state display means** for displaying information that indicates the focus state according to the focus state obtained by the focus state judging means on

display means, wherein the focus state judging means determines a focus state value and compares the focus state value to a **first and second focus state threshold**, the **focus state judged to be in focus if** the focus state value is greater than or equal to the first focus state threshold, **the focus state judged to require adjustment if** the focus state value is between the first and second threshold, and the **focus state judged to be incompetent to indicate focus if** the focus state value is below the second threshold.

The prior art fails disclose or render obvious the first and second focus state thresholds, wherein the focus state is judged to be in focus if the focus state value is greater than or equal to the first focus state threshold, the focus state judged to require adjustment if the focus state value is between the first and second thresholds, and the focus state judged to be incompetent if the focus value is below the second threshold *(Ohsawa discloses the second threshold, where if the contrast value is below a pre-determined level, focusing cannot be determined (col. 4, lines 20-23). However, the prior art fails to disclose the step of determining focus to be in focus if greater than a first threshold and requiring adjustment if between a first and second threshold.).*

Claims 3-8, 13, 15, 19-22 and 24 are allowed in the condition that they are dependent upon allowed claim 1.

As to claims 11 and 17 are allowed, as they pertain to subject matter similar to that of claim 1.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter Chon whose telephone number is 571-270-1556. The examiner can normally be reached on 7:30-5:00, Mon-Fri, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Ometz can be reached on 571-272-7593. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

/David L. Ometz/

Supervisory Patent Examiner, Art Unit 2622